

Organizational Intellectual Capital and the Role of the Nurse Manager. A Proposed Conceptual Model.

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### Abstract

**Background:** Nurse managers must leverage both the human capital and social capital of the teams they lead in order to produce quality outcomes. Little is known about the relationship between human capital and social capital and how these concepts may work together to produce organizational outcomes through leadership of nurses.

**Purpose:** The purpose of this paper was to explore the concepts of human capital and social capital as they relate to nursing leadership in healthcare organizations. Specific aims included: a) to synthesize the literature related to human capital and social capital in leadership, b) to refine the conceptual definitions of human capital and social capital with associated conceptual antecedents and consequences, and c) to propose a synthesized conceptual model guiding further empirical research of social capital and human capital in nursing leadership

**Methods:** A systematic integrative review of leadership literature using criteria informed by Whittemore and Knafl (2005) was completed. CINAHL Plus with Full Text, Academic Search Premier, Business Source Premier, Health Business FullTEXT, MEDLINE, and PsychINFO databases were searched for the years 1995-2016 using terms “human capital” and “social capital” and “management”.

**Results:** Analysis of conceptual definitions, theoretical and conceptual models, antecedents and consequences, propositions or hypotheses, and empirical support for 37 articles fitting review criteria resulted in the synthesis of the proposed [name blinded] Conceptual Model of Organizational Intellectual Capital.

**Conclusions:** The [name blinded] Conceptual Model of Organizational Intellectual Capital advances the propositions of human capital theory and social capital theory and is the first model

to conceptualize the direct and moderating effects that nurse leaders have on the human capital and social capital of the teams they lead. This model provides a framework for further empirical study and may have implications for practice, organizational policy, and education related to nursing leadership.

Keywords: Human capital, social capital, intellectual capital, nurse manager, conceptual model.

## Introduction

There is a growing crisis of leadership in the nurse manager role. The nurse manager role has been identified as a key leadership role to organizational success and can have profound impact on influencing quality patient care, productivity and financial stability, job satisfaction of nurses, and organizational commitment (Cathcart & Greenspan, 2012; Chase, 2012; Wendler, Olson-Sitki, & Prater, 2009). Healthcare reform, advances in technology, increased budgetary constraints, and increasing regulations have contributed to feelings of being overwhelmed, burnout, and increased turnover in nurse managers. In the United States alone, over half of experienced nurse managers are expected to retire in the next decade and nurse manager vacancy is expected to reach 67,000 by the year 2020 (Cadmus & Johansen, 2012; Cathcart & Greenspan, 2012; Titzer, Shirey, & Hauck, 2014).

In traditional hierarchical based leadership models, the manager was viewed as the all-knowing, all-powerful expert focused on command and control of workers in order to maintain equilibrium and achieve organizational goals (Lindberg, Nash, & Lindberg, 2008; Zimmerman, Lindberg, & Plsek, 2001). Through rapid expansion of information exchange and technology, main economic drivers have shifted from physical production to a focus on knowledge work in which knowledge must be acquired, synthesized, and applied in the production of organizational goals (Porter-O'Grady, 2003; Uhl-Bien, Marion, & McKelvey, 2007; Zimmerman et al., 2001). As this shift has occurred, contemporary leadership models of nurses in healthcare organizations have shifted from hierarchical command and control models to those based on influential relationships which require different interactions between the nurse manager and members of the team (Kellerman, 2012; Leitch, McMullan, & Harrison, 2013; Lindberg et al., 2008).

Contemporary models of nursing leadership have not always kept pace with the rapidly changing healthcare environment and little attention has been paid in the literature to the importance of productive relationships in the leadership of nurses. Traditional research of nurse manager effectiveness has focused on the concept of human capital, which may be defined as the acquired knowledge, skills, and experience of individuals which enable them to act in new ways which are economically valuable to both the individual and to the organization (Nahapiet & Ghoshal, 1998). Research in this area has led to the development of many nurse manager competency models, which define requisite knowledge, skills, and experience that are important to success in the role (Chase, 2012; The American Organization of Nurse Executives, 2011). Although understanding the requisite human capital of the nurse manager is important, it neither incorporates nor adequately describes the importance of the formation of influential relationships, or social capital, that nurse managers must develop with the intra-professional team in order to influence patient and organizational outcomes.

Social capital is a concept emerging in the nursing leadership literature which accounts for the influential relationship-based aspect of leadership and may be defined as “the groups, networks, norms, and trust that people have available to them for productive purposes” (Grootaert, Narayan, Jones, & Woolcock, 2004, p. 3). The ability of the nurse manager to form and maintain productive relationships and influence resource deployment in an organization becomes an important complementary factor to their individual human capital.

The concepts of human capital and social capital have been studied largely as separate rather than complementary factors. Knowledge workers such as nurse managers must access, synthesize, and utilize their own human capital and the human capital of others in a social context through social capital. Little is known about the relationship between human capital and

social capital and how these concepts may work together to produce organizational outcomes through leadership of nurses. Further research is necessary to explore the concepts of human capital and social capital on nursing teams and the mechanisms through which nurse managers influence social capital and human capital in the production of organizational outcomes. Empirical study may inform organizational practice, policy and procedure, and education related to nursing leadership.

### **Purpose**

The purpose of this paper was to explore the concepts of human capital and social capital as they relate to nursing leadership in healthcare organizations. This was accomplished through completing a systematic integrative review of the literature. Specific aims of this paper include a) to synthesize the literature related to human capital and social capital in leadership, b) to refine the conceptual definitions of human capital and social capital with associated conceptual antecedents and consequences, and c) to propose a synthesized conceptual model guiding further empirical research of social capital and human capital in nursing leadership.

### **Method**

Given the state of the science on human capital and social capital in the nursing leadership literature and the nature of the primary sources recovered during the literature review, the methodology of a systematic integrative review inclusive of fields outside of nursing was selected in order to include both empirical studies as well as theoretical or conceptual reviews. The specific integrative review methodology selected for the purposes of this paper is that outlined by Whittemore and Knafl (2005) which allows for the combination of diverse methodologies in the synthesis to advance understanding of a phenomenon of interest.

**Literature Search Process and Sample.**

The EBSCO Host system was used for the literature search. Initially, only CINAHL Plus with Full Text and the MEDLINE databases were searched. This search yielded no articles which focused on nursing leadership. The decision was made to broaden the search to include disciplines outside of nursing. Databases included in the final search were CINAHL Plus with Full Text, Academic Search Premier, Business Source Premier, Health Business FullTEXT, MEDLINE, and PsychINFO for the years 1995-2016. The databases were selected given the prevalence of both human capital and social capital in business, academic, and psychology literature inclusive of leadership. The years searched were limited to the last 20 years with the rationale that the concepts of interest evolve with contemporary society and the most recent literature should be examined. Results were filtered for peer review journals written in the English language. The following search terms were used: “social capital”, “human capital”, and “management”. Search terms were connected with the Boolean operator “AND”. The literature search yielded 729 unique articles. Titles and abstracts were reviewed for relevancy using the following inclusion criteria: a) contain conceptual or operational definitions of social capital and human capital b) discuss social capital as an attribute of team performance or management performance, or c) contain empirical referents to human capital and social capital. After title and abstract review, 658 articles were excluded. The remaining 71 full text articles were reviewed based on the following exclusion criteria: a) editorials b) articles focused on human and social capital in firm board of director members, c) articles focused on social capital in sport teams, d) articles focused on social capital and human capital as a basis for exploring gender or racial disparity, e) papers which focused on social capital or human capital as a function of individual financial compensation, f) articles focused on human capital and social capital in family owned

and operated businesses, and g) articles written by authors in for-profit companies selling instrumentation to businesses. After the review, 37 articles were included in the final sample. The final sample consisted of theoretical or conceptual reviews (n=14), quantitative research studies (n=19), and qualitative research studies (n=4). The country of origin for the majority of the studies was the United States (n=18). Journal types were predominantly management (n=23) and included human resources, economics, engineering, psychology, organizational dynamics, sociology, and nursing management.

### **Quality Appraisal**

Critical appraisal of the quality of each research study was coded using the quality of study instrument developed by Smith and Stullenbarger (1991) ([blinded for review]). Articles were not excluded based on the quality appraisal score for the purpose of this integrative review, but caution was used when synthesizing the results into the overall conceptual framework. Lower scoring items included operational definitions and instrument validity and instrument reliability. This is likely because of the vague conceptual definitions and lack of consistency found in the literature related to the concept of social capital and the inconsistency in instrumentation. This provided support for further development of the conceptual model and associated conceptual definitions.

### **Data Evaluation**

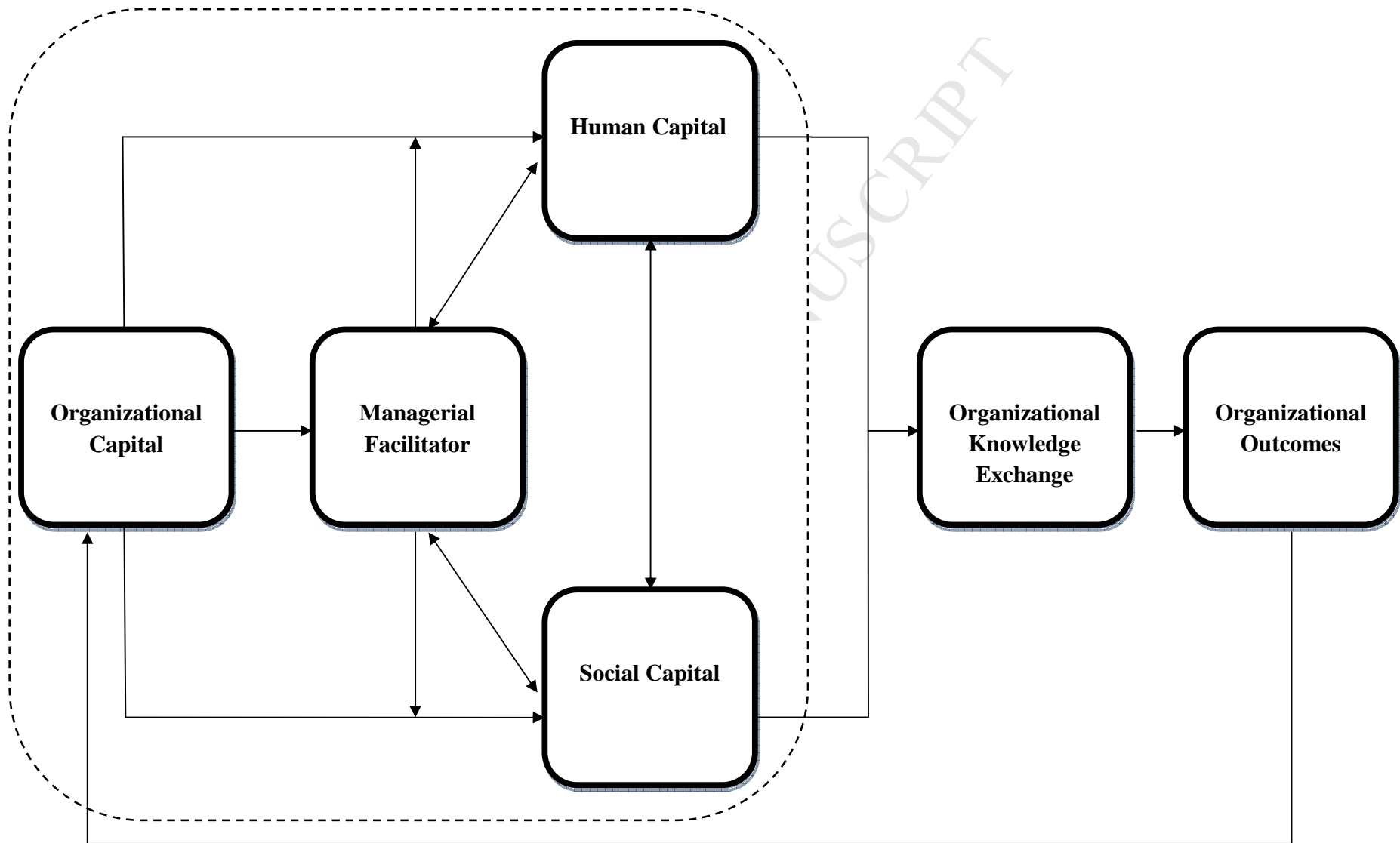
The articles were first read to examine the theoretical or conceptual foundations and the conceptual definitions of social capital and human capital. The following data was abstracted: a) theoretical or conceptual model presented in the paper, b) the conceptual definitions of social capital and human capital identified, c) antecedents and consequences of human and social



capital proposed in the article, and d) major propositions or hypotheses. Concepts and propositions were identified, organized, and classified according to the criteria established by Fawcett (1999). The conceptual definitions along with antecedents and consequences were organized by theme cluster and synthesized into concise conceptual definitions with associated domains. Additional data were abstracted from the empirical studies: a) study design, b) sampling procedures, c) sample, d) instrumentation and measures, e) results, and f) practical implications. Empirical support for associated propositions and hypotheses was examined. The propositions and hypotheses with empirical support were synthesized into the final conceptual model.

#### **Proposed Conceptual Model Based on Findings from Integrative Review**

The proposed conceptual model resulting from this integrative review will be referred to as the [name blinded] Conceptual Model of Organizational Intellectual Capital. Figure 1 is a graphical representation of all components in the model with associated propositions synthesized from the existing literature. A complete description of the concepts and proposed propositions are explained in the following sections. The main propositions of this conceptual model are presented in Table 1.

**FIGURE 1: [NAME BLINDED] CONCEPTUAL MODEL OF ORGANIZATIONAL INTELLECTUAL CAPITAL**

<b>TABLE 1</b> <b>MAIN PROPOSITIONS IN [NAME BLINDED] CONCEPTUAL MODEL OF ORGANIZATIONAL INTELLECTUAL CAPITAL</b>	
Organizational Intellectual Capital consists of three interrelated forms of intellectual capital: organizational capital, human capital, and social capital.	
Organizational capital has an effect on human capital and social capital.	
Organizational capital has an effect on the managerial facilitator.	
There is a relationship between the managerial facilitator and human capital.	
There is a relationship between the managerial facilitator and social capital.	
The managerial facilitator moderates the relationship between organizational capital and human capital.	
The managerial facilitator moderates the relationship between organizational capital and social capital.	
There is a relationship between human capital and social capital.	
Human capital and social capital have an effect on organizational knowledge exchange.	
Organizational knowledge exchange has an effect on organizational outcomes.	
Organizational outcomes have an effect on organizational capital through organizational learning.	

## Description of Concepts

**Human capital.** Human capital may be defined as the acquired knowledge, skills, and experience of individuals which enable them to act in new ways which are economically valuable to both the individual and to the organization (Call, Nyberg, & Thatcher, 2015; Felício, Couto, & Caiado, 2014; Greve, Benassi, & Sti, 2010; Makela, Bjorkman, & Ehrnrooth, 2009; Nahapiet & Ghoshal, 1998). Human capital brings value to the organization as a standard of competency and creativity that employees possess which allows them to solve problems, create new knowledge, challenge current practices, and identify and leverage performance opportunities (Kang & Snell, 2009; Kostopoulos, Bozionelos, & Syrigos, 2015; Subramaniam & Youndt, 2005).

Human capital is largely an individual based phenomenon (Greve et al., 2010; Kang & Snell, 2009; Ng & Feldman, 2010; Youndt, Subramaniam, & Snell, 2004). Organizations do not own human capital, but rather borrow or lease the acquired knowledge, skills, and experience of the individual employee through the employment agreement. Since employment agreements are at will, employees may leave the organization at any time, taking with them their individual human capital (Somaya, Williamson, & Lorinkova, 2008; Youndt et al., 2004). Quantity and quality of human capital in an organization are affected by hiring practices, involuntary turnover, and employee mobility within the organization (Subramaniam & Youndt, 2005).

In order to produce economic value for individuals or organizations, human capital must be accessed, synthesized, and utilized (Daud & Yusoff, 2010; I. Hsu & Sabherwal, 2011). The relative economic value of human capital is dependent on the context of the organization in which it is used (Call et al., 2015; Choi, 2016; Luthans & Youssef, 2004). Human capital may

be industry-specific in nature and verified through specific means such as licensure or certification (Ng & Feldman, 2010). Human capital may be classified in a spectrum ranging from explicit (easily communicated or exchanged) or tacit (difficult to communicate or exchange) (Subramaniam & Youndt, 2005; Youndt et al., 2004). Firm-specific tacit human capital (or specialized knowledge, skills, and experience which is difficult to translate or exchange) of an individual may be the most valuable and difficult to lose in an organization because of the scarcity and replacement costs (Dess & Shaw, 2001).

**Social capital.** Social Capital is a complex concept that is gaining popularity in the literature, but has also been much debated in terms of definition, operationalization, measurement, and function (C. Hsu, Chang, Huang, & Chiang, 2011; Styhre, 2008). The literature demonstrates that there are three distinct theoretical perspectives of social capital theory each with a slightly different definition of the concept: a) the functional perspective, b) the network perspective, and c) the multidimensional perspective (C. Hsu et al., 2011). The theoretical perspective and conceptual definition of social capital found in the literature may vary dependent on the level of analysis (Pastoriza & Ariño, 2013).

The functional perspective developed by Coleman (1988) and Putnam (1993) conceptualizes social capital as a functional resource which facilitates individuals to action and enhances collaboration. The network perspective of social capital theory developed by Bourdieu (1986) defines social capital as a resource embedded in networks of social relationships in which an individual or groups are members (Nahapiet & Ghoshal, 1998). The network perspective was later evolved conceptualize social capital in three domains: a) the structural domain which identifies the network connections of individuals, b) the cognitive domain which reflects the extent to which individuals have a common vision or common goals within a network, and c) the

relational domain which defines the quality and nature of the relationships between individuals within the network through trust, reciprocity, and emotional intensity (Nahapiet & Ghoshal, 1998).

Grootaert et al. (2004) evolved and synthesized the functional and network theoretical perspectives to develop the multi-dimensional perspective. This perspective conceptualizes social capital as a resource both inherent in a network and as a resource which facilitates action among network members. This conceptual definition identifies social capital as “the groups, networks, norms, and trust that people have available to them for productive purposes” (Grootaert et al., 2004, p. 3). In this perspective, social capital is not viewed as a network or function of relationships alone, but as a phenomenon of six interrelated domains: 1) bonding, bridging, and linking networks, 2) trust and solidarity, 3) collective action and cooperation, 4) information and communication, 5) social cohesion and inclusion, and 6) empowerment and political action (Grootaert et al., 2004; Hofmeyer, 2013).

The concept of social capital had the most variance in conceptual definition across the articles reviewed. The theoretical perspective chosen for the purposes of this paper is the more contemporary multi-dimensional perspective with the six associated domains. This evolved and complete conceptual definition allows social capital to be applied in a wide range of settings and from the micro level, such as an individual, to the macro level such as an entire population (Grootaert & Van Bastelaer, 2002).

The domain of bonding, bridging, and linking networks are conceptualized as three types of network ties which facilitate access to knowledge and create opportunities for individuals and groups. Bonding network ties are strong ties in closed networks which bind individuals in a

social unit with similar backgrounds, status, or experience to each other such as a family, friend, or a colleague (Baughn, Neupert, Anh, & Hang, 2011; Debrulle, Maes, & Sels, 2014; Djuric & Filipovic, 2015; Hofmeyer, 2013; Kostopoulos et al., 2015). These strong network ties assist individuals with access to information and support but may limit the amount of information that is assimilated from outside the social unit. This has the potential to limit processing of external information, incorporation of new evidence into the environment, or innovation (Debrulle et al., 2014; Hofmeyer, 2013; Kostopoulos et al., 2015). An example of a bonding network tie would be a connection between two nurses on the same work unit. The strong bond between those nurses provides a conduit for access to information and support as they work together. This network tie may also limit their ability to trust others outside of the work unit and they may be reluctant to incorporate outside information into their work unit.

Bridging network ties are weak ties in open networks which bridge connections to others of similar social status that reside outside of the social unit (Baughn et al., 2011; Debrulle et al., 2014; Djuric & Filipovic, 2015; Hofmeyer, 2013; Kostopoulos et al., 2015). These network ties facilitate access to diverse knowledge and resources external to the social unit and may create reciprocity (Hofmeyer, 2013; Kostopoulos et al., 2015). An example of a bridging network tie would be a nurse who is floated to another unit and forms a connection with another nurse working on the unit. These nurses may form a bridging network tie which enhances access to expertise and information outside the confines of their individual work units. Finally, linking network ties are weak ties in open and vertical networks that link individuals in a social unit to those with more authority or power that facilitate access to resources and information that enable social advancement (Hofmeyer, 2013). An example of a linking network tie would be a nurse manager who asks a chief nursing officer to mentor them on their career path. The link that is

formed between the nurse manager and the chief nurse could lead to a gain in information or access to resources allowing for an advantage in career advancement opportunities for the nurse manager.

The domain of trust and solidarity as an essential component of social capital was commonly found in the articles reviewed. The most commonly discussed attribute reviewed across the studies was trust, with all articles referencing trust as an important component of social capital. Interrelated to trust, the attribute of solidarity was identified across the articles as a cognitive process of feelings of shared meaning and unity (Baughn et al., 2011; Call et al., 2015; Choi, 2016; Dess & Shaw, 2001; Djuric & Filipovic, 2015; Hofmeyer, 2013; Kang & Snell, 2009; Makela et al., 2009; Styhre, 2008). If trust exists between the nurse manager and the nurses on the unit, there will likely be an increase in the feeling of trust and harmony among team members leading to more effective team dynamics. The domain of collective action and cooperation was also commonly found across the reviewed articles. The purpose of social capital is to serve as a bond between individuals to work collectively towards a shared organizational goals through collaboration and cooperation (Djuric & Filipovic, 2015; Hofmeyer, 2013; Makela et al., 2009; Reed, Lubatkin, & Srinivasan, 2006; Styhre, 2008; Tseng, Wang, & Yen, 2014). For instance, a nurse manager who includes staff in setting unit goals and clearly communicates expectations may experience an increase in collaborative practice among team members.

Information and communication is an important domain not found in other conceptualizations of social capital. Accessing, processing, synthesizing, and communicating knowledge within and across units is a key function of social capital as well as a primary form of production in a knowledge-based organization (Asiaei & Jusoh, 2015; Call et al., 2015; Debrulle



et al., 2014; Hofmeyer, 2013; Kang & Snell, 2009; Oldroyd & Morris, 2012; Shaw, Duffy, Johnson, & Lockhart, 2005; Styhre, 2008; Youndt et al., 2004). The bonds formed between nurse managers and the teams that they lead serve as a conduit for exchanging vital information necessary to complete identified patient care and organizational goals. The social cohesion and inclusion domain includes how outsiders are assimilated into a group and how conflict, diversity, and change is handled in the social unit (Grootaert et al., 2004; Hofmeyer, 2013). Examples of this domain would be the process through which nurses are welcomed onto the unit and oriented or how the nurse manager facilitates conflict between team members. Finally, the empowerment and political action domain reflects the extent to which individuals have control or a voice in the processes and structures that affect them (Cabello-Medina, López-Cabrales, & Valle-Cabrera, 2011; Hofmeyer, 2013). An example of this domain would be the nurse manager creating a shared governance model to make decisions with nurses on the unit rather than acting unilaterally.

**Organizational capital.** When examining the antecedents to human and social capital noted in the literature, a pattern emerged. Many of the antecedents to human and social capital can be conceptualized as inherent structures or processes in organizations. As the antecedents were evaluated, organized, and classified, the concept of organizational capital emerged with the associated domains as a major influence on the development of human capital and social capital. Organizational capital is a concept which may be defined as the “institutionalized knowledge and codified experience that arises from established structures, processes, and routines” (Kang & Snell, 2009, p. 70). The purpose of organizational capital is to coordinate action among a group of interdependent individuals in an organization and provides the context which may define the relative economic value of the human capital and social capital in the organization (Kang &

Snell, 2009; Subramaniam & Youndt, 2005; Youndt et al., 2004). Established patterns and structures for organizational capital document and preserve knowledge based on past successful practices in order to encourage repeated use in the organization (Kostopoulos et al., 2015; Subramaniam & Youndt, 2005).

Three distinct domains of organizational capital emerged from the literature review which will be referred to as the following: a) the architectural domain, b) the cultural domain, and c) the knowledge domain. The architectural domain refers to the formalized structures and processes that exist in an organization that guide organizational decision making. Nurse managers and the teams they lead are affected by the context of the organizational structure and established policy and procedure. This includes established hierarchy or reporting structure and human resource policy and procedures guiding labor management practices such as job descriptions and assignments, hiring, staffing, and disciplinary action (Baughn et al., 2011; Bilhuber Galli & Müller-Stewens, 2012; Cabello-Medina et al., 2011; Call et al., 2015; Debrulle et al., 2014; Ellinger, Ellinger, Bachrach, Yu-Lin, & Elmadağ Baş, 2011; Kang & Snell, 2009; Kostopoulos et al., 2015; Luthans & Youssef, 2004; Makela et al., 2009; Ng & Feldman, 2010; Oldroyd & Morris, 2012; Reed et al., 2006; Stark & Jeffries, 2011; Subramaniam & Youndt, 2005; Youndt et al., 2004).

The cultural domain of organizational capital accounts for the structures and processes influenced by organizational history and social responsibility. This includes the formal objectives, plans, and purpose of action such as the mission, vision, and values, and strategic plans of the organization (Akdere, 2005; Akdere & Roberts, 2008; Djuric & Filipovic, 2015), the established organizational traditions and culture (Asiaei & Jusoh, 2015; Baughn et al., 2011; Dess & Shaw, 2001), and corporate social responsibility (Ferreira-Lopes, Roseta-Palma, &

Sequeira, 2012; Stark & Jeffries, 2011). For example, a faith-based healthcare organization may have different policies and procedures based on the doctrine of the affiliated faith which guide provided services and nursing behavior in the organization.

The knowledge domain of organizational capital accounts for the structures and processes through which knowledge is utilized, exchanged, created, and stored. This includes investment in research and development (Youndt et al., 2004), information technology (Choi, 2016; Tseng et al., 2014), patents, policies and procedures (Ellinger et al., 2011), investment in training, development, and mentoring (Baughn et al., 2011; Bilhuber Galli & Müller-Stewens, 2012), and knowledge management processes such as identification, acquisition, and dissemination of knowledge (Bapuji & Crossan, 2005; Daud & Yusoff, 2010; Styhre, 2008; Tseng et al., 2014). An organization with a commitment to knowledge development may have resources available for nurse manager development or nurse-led research.

Organizational capital differs from other forms of intellectual capital as it is the one form of intellectual capital that is owned by the organization. It is also the least flexible of the three forms of intellectual capital, as it exists in codified rules, regulations, norms, policies, and patents (Subramaniam & Youndt, 2005; Youndt et al., 2004). Organizational capital may be further classified by its rigidity from mechanistic to organic. Mechanistic classifications encourage conformity and rule following which is usually linked to historically successful processes and structures linked to legitimized and reliable knowledge (Kang & Snell, 2009; Subramaniam & Youndt, 2005). Mechanistic organizational capital allows for the least amount of variation from established processes. Organic organizational capital in contrast still has the intent of coordinating action but allows for more variation from established processes. Organic organizational capital has guiding principles and rules, but they are less structured in nature and

allows for more employee independence and autonomy in decision making allowing for increased innovation and absorption of new knowledge (Kang & Snell, 2009). For example, organizations with overly stringent policies and procedures may inadvertently stifle the ability of the nurse manager and nursing team to innovate practice changes.

**Intellectual capital.** The three forms of capital identified in this review can be organized into one collective construct of intellectual capital. The construct of intellectual capital may be defined as “the sum of all knowledge an organization is able to leverage in the process of conducting business to gain competitive advantage” (Youndt et al., 2004, p. 337). This includes the three forms of intellectual capital described previously: organizational capital, human capital, and social capital. When viewed as a whole, the three forms of intellectual capital may be viewed as interrelated concepts which contribute to organizational knowledge exchange in a distinct yet interrelated way. Human capital is a phenomenon of individual people in an organization, social capital is a phenomenon of relationships in an organization, and organizational capital is a phenomenon of policies, procedures, and technology in an organization (Subramaniam & Youndt, 2005; Youndt et al., 2004).

**Managerial facilitator.** Another concept that emerged during the literature review is that of the managerial facilitator. The managerial facilitator may be defined as a key agent of the organization who is responsible for facilitating organizational outcomes through the work of other individuals. Across the articles reviewed, managerial behavior was a commonly identified antecedent of human and social capital (Felício, Couto, & Caiado, 2012; Felício et al., 2014; Hofmeyer, 2013; Leitch et al., 2013; Luthans & Youssef, 2004). Managerial behavior is also influenced by organizational capital which provides both the context for action and the rules of engagement (Ellinger et al., 2011; Felício et al., 2012; Hofmeyer, 2013). In knowledge-based

organizations, the manager must ensure the achievement of shared organizational goals through the facilitation of learning and knowledge exchange by enacting behaviors that enhance employee human and social capital (Ellinger et al., 2011).

Much support can be found in the literature linking the managerial facilitator to human capital through staff selection, role definition, appropriation of responsibilities, and staff accountability via application of HR functions and processes (Ellinger et al., 2011; Felício et al., 2012; Hofmeyer, 2013; Stark & Jeffries, 2011). The behavior of the managerial facilitator may have profound effects on human capital through turnover, recruitment, and retention (Dess & Shaw, 2001; Felício et al., 2012; Hofmeyer, 2013; Oldroyd & Morris, 2012; Stark & Jeffries, 2011; Styhre, 2008).

While less attention has been given to the effects that managerial facilitators have on social capital, this is arguably the primary source of value for the managerial facilitator in a knowledge based-organization (Dess & Shaw, 2001; Ellinger et al., 2011). Managerial facilitators primarily add value through their effects on social capital. They are responsible for facilitating productive relationships with and between employees leading to organizational outcomes through knowledge exchange and production. These relationships may be less effective when based on command and control or coercive managerial practices than when they are based on credibility, trust, respect, and relational managerial styles (Dess & Shaw, 2001; Djuric & Filipovic, 2015; Ellinger et al., 2011; Hofmeyer, 2013; Stark & Jeffries, 2011).

Managerial facilitators have direct relationships with human and social capital in their areas, but may also moderate the relationship between organizational capital and human and social capital. Managerial facilitators are the closest to employees in an organization and have

the most influence in the relationship between the employee and the organization because of frequent personal interactions (Ellinger et al., 2011). Managerial facilitators are responsible for communicating the moral tone of the work unit and hold employees accountable for expectations related to reciprocity, cooperation, and respect (Hofmeyer, 2013). Managerial facilitators are responsible for brokering employee access to organizational capital such as professional development which increase employee human capital (Felício et al., 2012). Managerial facilitators must translate and communicate organizational goals to employees which helps to coordinate action and understanding of shared goals (Hofmeyer, 2013). Managerial facilitators may also facilitate employee relationships outside of the work unit with others in the organization. These relationships increase access to the social capital and human capital of others allowing for increased organizational knowledge exchange (Dess & Shaw, 2001; Leitch et al., 2013; Oldroyd & Morris, 2012).

**Organizational knowledge exchange.** The concept of organizational knowledge exchange was identified in the articles reviewed as the consequence of the utilization of human capital and social capital in organizations. Knowledge-based organizations require the exchange of information between members in the social network in order to produce outcomes. Neither human capital nor social capital may act independently of the other in order to produce outcomes. The process of organizational knowledge exchange may be defined as the access, exchange, and synthesis of acquired knowledge, skills, and experience of individuals through the network of social relationships leading to the production of organizational outcomes (Bapuji & Crossan, 2005; Kang & Snell, 2009; Subramaniam & Youndt, 2005; Youndt et al., 2004). Organizational knowledge exchange may be viewed as a primary source of competitive

advantage for organizations (I. Hsu & Sabherwal, 2011; Kang & Snell, 2009; Makela et al., 2009; Reed et al., 2006; Somaya et al., 2008; Stark & Jeffries, 2011) .

The efficacy of organizational knowledge exchange is affected by the quality and quantity of the human capital and the social capital present in the exchange. The quality and combination of the human capital and social capital will influence the opportunity, motivation and ability to exchange knowledge, the dominant pattern of decision making from the exchange, and ease of information exchange (Akdere, 2005; Bilhuber Galli & Müller-Stewens, 2012; Kang & Snell, 2009; Kor & Mesko, 2013; Shaw et al., 2005; Styhre, 2008). Nurse managers who cultivate teams with higher levels of requisite human capital while facilitating productive social dynamics through social capital may experience an increase in knowledge exchange among team members on their work units.

**Organizational outcomes.** Many of the consequences of social capital and human capital examined were classified as organizational outcomes. Organizational outcomes may be defined as the intended or unintended consequences of the utilization of organizational intellectual capital in the production of work. Organizational outcomes resulting from the utilization of human capital and social capital through organizational knowledge exchange were examined and classified into four domains: 1) financial, 2) reputational, 3) human, and 4) organizational learning. The financial domain includes wealth, efficiency, profit, productivity, and sustainable development (Akdere, 2005; Akdere & Roberts, 2008; Asiaei & Jusoh, 2015; Cabello-Medina et al., 2011; Dess & Shaw, 2001; Djuric & Filipovic, 2015; Felício et al., 2012, 2014; Greve et al., 2010; Leitch et al., 2013; Reed et al., 2006; Somaya et al., 2008; Youndt et al., 2004). The reputational domain includes reputational power, goodwill, and competitive advantage (Akdere, 2005; Akdere & Roberts, 2008; Bilhuber Galli & Müller-Stewens, 2012;

Daud & Yusoff, 2010; Dess & Shaw, 2001; Felício et al., 2014; Kang & Snell, 2009; Luthans & Youssef, 2004; Makela et al., 2009; Reed et al., 2006; Somaya et al., 2008; Stark & Jeffries, 2011). The human domain includes employee performance, employee commitment, employee engagement, recruitment, retention, and turnover (Call et al., 2015; Ellinger et al., 2011; Hofmeyer, 2013; Leitch et al., 2013; Oldroyd & Morris, 2012; Shaw et al., 2005; Somaya et al., 2008; Stark & Jeffries, 2011). Finally, organizational learning domain occurs from the production and storage of new knowledge acquired from organizational knowledge exchange. This includes the results of research and development activities, innovation, the ability to assimilate and exploit new information, and the evaluation of outcomes (Akdere, 2005; Akdere & Roberts, 2008; Debrulle et al., 2014; Hofmeyer, 2013; Kang & Snell, 2009; Kor & Mesko, 2013; Styhre, 2008; Subramaniam & Youndt, 2005; Tseng et al., 2014; Youndt et al., 2004). The organizational learning domain also provides the mechanism through which organizational outcomes are evaluated, synthesized, and assimilated into organizational capital. Changes in organizational capital may occur as organizations evaluate and learn from the intended and unintended consequences of their structures and processes.

### **Empirical Support for Proposed Conceptual Model from Reviewed Studies**

The results of the empirical studies reviewed provide support for the synthesized propositions in the [name blinded] Conceptual Model of Organizational Intellectual Capital (See Table 2). Many of the reviewed empirical studies related human capital and social capital directly to organizational outcomes, but did not include the mechanism through which outcomes are produced, or the concept of organizational knowledge exchange. None of the empirical studies reviewed provided empirical support for the following proposition: organizational outcomes have an effect on organizational capital through organizational learning. This



proposition was derived from the conceptual papers included in the sample and from the literature reviews found in selected empirical studies and was included in the final model (Akdere, 2005; Akdere & Roberts, 2008; Debrulle et al., 2014; Hofmeyer, 2013; Kang & Snell, 2009; Kor & Mesko, 2013; Styhre, 2008; Subramaniam & Youndt, 2005; Tseng et al., 2014; Youndt et al., 2004).

**TABLE 2: EMPIRICAL SUPPORT FOR IDENTIFIED PROPOSITIONS AND SAMPLE HYPOTHESES FOR FURTHER DEVELOPMENT**

<b>PROPOSITION</b>	<b>EMPIRICAL SUPPORT FROM REVIEWED LITERATURE</b>	<b>SAMPLE HYPOTHESES</b>
Organizational capital has an effect on human capital.	<p>Organizational culture has a positive significant effect on human capital (Asiaei &amp; Jusoh, 2015).</p> <p>Developmental human resource management practices have a positive significant effect on the value of knowledge (Cabello-Medina et al., 2011).</p> <p>Organizational capital is positively and significantly related to human capital (I. Hsu &amp; Sabherwal, 2011; Kostopoulos et al., 2015).</p> <p>The relationships between human capital and unit ambidexterity were stronger when high performance human resource practices were greater (Kostopoulos et al., 2015).</p> <p>Training programs assist in developing firm specific human capital (Tseng et al., 2014).</p> <p>Human resource management investment was significantly higher in high human capital and high overall IC profiles (Youndt et al., 2004).</p>	<p>Availability of tuition reimbursement is positively correlated with education level of nurses in an organization.</p> <p>Human resource hiring practices are correlated with BSN rates of nurses in a healthcare organization.</p> <p>Availability of nursing continued professional development activities in a healthcare organization is correlated with a higher certification rate of nurses.</p> <p>Organizational compensation practices for nurse managers are correlated with years of experience and educational level of nurse managers in an organization.</p> <p>Extremely rigid human resource attendance policies are negatively correlated with average years of experience in an organization.</p>

<p>Organizational capital has an effect on social capital.</p>	<p>Overall measures of organizational training were significant predictors of social capital participation, connections, and trust and cooperation; Operational training was a significant predictor in trust and cooperation and in social capital participation; Cultural training was a significant predictor of social capital participation and connections; Initial control of HR functions was significantly and positively related to social capital (Baughn et al., 2011).</p> <p>Orientation of selection processes have a significant positive effect on social capital; Staffing practices based on interpersonal skills and learning potential affect social capital; empowerment and involvement practices have a significant positive effect on social capital (Cabello-Medina et al., 2011).</p> <p>Organizational knowledge management practices explained 37% of the variance in social capital; Knowledge acquisition and knowledge conversion both have a positive and significant effect on social capital (Daud &amp; Yusoff, 2010).</p> <p>Organizational investments in social capital have a strong positive relationship with measures of social capital and job performance (Ellinger et al., 2011).</p> <p>Cross level interactions of organizational capital and social capital were positive and significant (Kostopoulos et al., 2015).</p>	<p>Nurse participation in a peer review process is correlated with higher levels of nurse trust in an organization.</p> <p>Participation in a nurse residency program is positively correlated with higher levels nurse trust in the organization.</p> <p>Higher budgeted hours per patient day are correlated with higher levels of nurse trust in senior leadership in an organization.</p> <p>Nurse participation in a shared governance model is positively correlated with higher levels of reported nurse empowerment and political action.</p> <p>Implementation of a shared governance model in a healthcare organization is positively correlated with the number of reported bridging and linking network ties.</p>
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	<p>Organizational investment in social capital has a strong positive relationship with commitment to service quality, person-focused citizenship behavior, and task-focused citizenship behavior (Ellinger et al., 2011).</p> <p>Social capital has a positive significant effect on organizational capital (I. Hsu &amp; Sabherwal, 2011).</p> <p>Human resource management investment was significantly higher in high social capital, and high overall IC profiles (Youndt et al., 2004).</p>	
Organizational capital has an effect on the managerial facilitator.	<p>Developing social capital through a leadership development program may be a source of competitive advantage (Bilhuber Galli &amp; Müller-Stewens, 2012).</p> <p>Companies in different business sectors vary in their association with human capital that predominantly typifies actions of the entrepreneur or manager. (Felićio et al., 2012).</p> <p>Management of services depends highly on human capital, but ethical standards in the company strengthens and rewards managerial behavior (Tseng et al., 2014).</p>	<p>Human resource policy and procedure in an organization is correlated with managerial hiring behavior.</p> <p>Nurse manager compensation packages are positively correlated with nurse manager human capital in an organization.</p> <p>Positive nurse manager perceptions of human resource support are positively correlated with nurse manager job satisfaction and negatively correlated with nurse manager intent to leave.</p> <p>Budgeted hours per patient day on a nursing unit have a curvilinear relationship with reported nurse manager</p>

		burnout and intent to leave.
There is a relationship between the managerial facilitator and human capital.	<p>Less managerial experience in an industry is associated with greater family entanglement and professional complicity (Felício et al., 2012).</p> <p>Leadership development enhances human capital (Leitch et al., 2013).</p> <p>Once managers are highly embedded in an organization, the less likely they are to engage in development of internal social capital, in turn leading to a decrease in the development of human capital; (Ng &amp; Feldman, 2010).</p>	<p>Educational level of the nurse manager is positively correlated with educational level of the staff.</p> <p>Leadership certification of the nurse manager is positively correlated with unit certification rates.</p> <p>Quality nurse manager communication is negatively correlated with nurse intent to leave the organization.</p> <p>Nurse manager transformational leadership style is negatively correlated with nurse vacancy rates.</p>
There is a relationship between the managerial facilitator and social capital.	<p>Benefits of managerial coaching was considerably stronger under low coaching conditions (Ellinger et al., 2011).</p> <p>Less managerial experience in an industry is associated with greater family entanglement and professional complicity; Entrepreneurs were generally associated with complicity and family support, managers with economic status, social status, social interlinking, intense personal relationships, and social influence. (Felício et al., 2012).</p> <p>Leadership development relies on social capital on two levels: peer-to-peer relationships through interactions among participants and through mediating effects of</p>	<p>Productive nurse manager conflict resolution is positively correlated with social cohesion and shared goals reported by nurses.</p> <p>Nurse managers who lead teams through shared governance model will be correlated with higher levels of nurse empowerment and political action and trust in the manager.</p> <p>Nurse managers who have higher levels of human capital will have nurses who</p>

	<p>bridging social capital through the program director's link to other courses and cohorts (Leitch et al., 2013).</p> <p>Once managers are highly embedded in an organization, the less likely they are to engage in development of internal social capital, in turn leading to a decrease in the development of human capital (Ng &amp; Feldman, 2010).</p>	<p>report higher levels of social capital on the unit.</p>
<p>The managerial facilitator moderates the relationship between organizational capital and human capital.</p>	<p>Characteristics of human capital are associated with a predominant profile of a manager of significant status and influential personal and social relationships; Companies in different business sectors vary in their association with human capital that predominantly typifies actions of the entrepreneur or manager (Felício et al., 2012).</p> <p>High and ambiguous leader-member exchange had significantly higher means than low leader-member exchange for intent to stay and disposition towards the organization (Stark &amp; Jeffries, 2011).</p>	<p>Nurse managers who communicate and discuss organizational initiatives with staff will exhibit higher nurse engagement scores.</p> <p>Nurse managers who facilitate staff success to organizational educational resources will have nurses who report higher levels of human capital.</p>
<p>The managerial facilitator moderates the relationship between organizational capital and social capital.</p>	<p>Companies in different business sectors vary in their association with social capital that predominantly typify actions of the entrepreneur or manager (Felício et al., 2012).</p> <p>Social capital may be described as a collective phenomenon through which those who have lower levels of social capital may have spillover effects through connection with those who have higher levels (Leitch et al., 2013).</p>	<p>Managers who encourage and allow staff to participate in organizational workgroups have staff who report higher levels of collaboration and cohesiveness with other work units in the organization.</p> <p>Nurse managers who facilitate staff access to organizational educational resources will have nurses who report higher levels of trust in the organization.</p>

	High quality leader-member exchange had a significantly higher mean than other groups for willingness to endorse the organization (Stark & Jeffries, 2011).	
There is a relationship between human capital and social capital.	<p>Trust has a significant positive effect on human capital (Asiaei &amp; Jusoh, 2015).</p> <p>Social capital significantly and positively affects the value of human capital; Empowerment practices significantly increase the uniqueness of human capital (Cabello-Medina et al., 2011).</p> <p>Cognitive ability and experience are factors that relate to social capital variables; Human capital accounts for firm performance as social capital and its formation is dependent on human capital (Felício et al., 2014).</p> <p>Declines in social capital development behaviors were significantly related to declines in human capital development behaviors; Initial status of social capital development behaviors were positively related to human capital development behaviors (Ng &amp; Feldman, 2010).</p>	<p>Higher levels of human capital on a unit are correlated with higher levels of social capital on a unit.</p> <p>Nurse manager human capital is positively correlated with nurse social capital on a unit.</p>
Human capital and social capital have an effect on organizational knowledge exchange.	Trust, commitment, expertise, and tenure were all significantly and positively related to knowledge sharing behavior; norms of cooperation was negatively and significantly related to knowledge sharing behavior; With a low level of IT usage, trust is a more significant indicator of knowledge sharing behavior, with a high level of IT usage, trust is less significant. The interaction of level of expertise and IT usage is positive and significant (Choi,	<p>Higher levels of social capital and human capital are positively correlated with higher levels of organizational knowledge exchange.</p> <p>Nurses who hold a specialty certification are more likely to identify and assimilate evidence based practice changes in their</p>

	<p>2016).</p> <p>The relationship between start-up experience and start-up absorptive capacity (ability to recognize and assimilate new information) is positive and significant; The relationship between bridging social capital and start-up absorptive capacity was positive and significant (Debrulle et al., 2014).</p> <p>Social capital has a positive significant effect on knowledge enhancement capability and knowledge utilization capacity; Human capital has a significant effect on knowledge utilization capability and innovation (I. Hsu &amp; Sabherwal, 2011).</p> <p>Social capital enhances performance and allows for knowledge exchange as human capital becomes obsolete over time (Tseng et al., 2014).</p> <p>Human capital and social capital have positive significant effects on unit ambidexterity (Kostopoulos et al., 2015).</p> <p>Four archetypes of subsidiary staffing with different levels of human and social capital emerged each with different influence on knowledge management; The optimal staffing architecture is dependent on the goals of the organization and the markets in which they function (Makela et al., 2009).</p> <p>Human capital by social capital interaction had a significant positive relationship with radical innovative</p>	<p>work unit.</p> <p>Nurses who report higher levels of bridging network ties will be more likely to adapt to practice changes on their unit.</p> <p>The interaction of social capital by human capital on a nursing unit will enhance the quality of the organizational knowledge exchange on that unit.</p>
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	<p>capability; Social capital was significantly and positively related to both radical innovative capability and incremental innovative capability (Subramaniam &amp; Youndt, 2005).</p>	
<p>Organizational knowledge exchange has an effect on organizational outcomes.</p>	<p>Human capital and social capital are related to firm performance (Baughn et al., 2011).</p> <p>Knowledge management processes explained 39% of the variance in firm performance (Daud &amp; Yusoff, 2010).</p> <p>Turnover rate significantly and negatively related to productivity; There is a curvilinear relationship between social capital losses and performance; Turnover and communication network density moderate this relationship (Shaw et al., 2005).</p> <p>Movement of employees to both partners and competitors has an effect on the amount of business received through the social ties the employee has created (Somaya et al., 2008).</p>	<p>Higher levels of organizational knowledge exchange reported by a nursing unit are positively correlated with NDNQI quality metric performance on that unit.</p> <p>Nursing units reporting a low level of organizational knowledge exchange will be correlated with higher nurse turnover and vacancy rates.</p> <p>Nursing units reporting a high level of organizational knowledge exchange will be correlated with a lower average cost per adjusted discharge.</p>

### **Limitations**

This integrative review has several limitations. Given the vast nature of available leadership literature, it is possible that the search terms limited the results. The literature search included professions outside of nursing and it is possible that some of the results may not be applicable in the nursing work environment. Since the literature search was not limited to empirical studies, the conceptual definitions and the associated propositions may be based partially on expert opinion rather than empirical evidence. The inconsistent approaches and lack of uniform instrumentation for human capital and social capital across the articles may have also limited the interpretability of the results.

### **Future Development of the Conceptual Model**

The specific aims of this integrative review were to explore and refine the concepts of human capital and social capital as they relate to nursing leadership in healthcare organizations and to propose a synthesized conceptual model guiding further empirical research. The [name blinded] Conceptual Model of Organizational Intellectual Capital advances the theoretical propositions of both Nursing Intellectual Capital Theory and Social Capital Theory by providing a more complete conceptualization of the relationship between human capital and social capital along with associated factors in the provision of organizational outcomes based on the integrative literature review. In addition, this conceptual model is the first to propose the direct and moderating effects of the managerial facilitator on human and social capital within the context of healthcare organizations.

While the relationships between the nurse manager and staff has demonstrated positive or adverse influence on relationships with staff, productivity, turnover, job satisfaction, and

quality patient outcomes, empirical research has not yet identified the specific mechanisms through which nurse managers form and utilize these influential relationships (Hofmeyer, 2013). The proposed conceptual model provides a framework to identify and define the mechanism of these influential relationships in a healthcare organization. This model needs to be empirically tested in the nursing work environment in order to validate the proposed propositions. Further research using the [name blinded] Conceptual Model of Organizational Intellectual Capital has implications for practice, organizational policy, and education and may be applied to various levels of nursing leadership. Table 2 includes sample hypotheses guiding further empirical research.

Empirical research guided by the proposed conceptual model may contribute to organizational role design, organizational policy and procedure development, nurse manager hiring and retention practices, and nursing leadership curriculum design for traditional academic institutions and organizational continued professional development programs. Further understanding of these factors is likely to inform interventions which may improve the nurse work environment, patient care, and organizational outcomes.

## References

- Akdere, M. (2005). Social capital theory and implications for human resource development. *Singapore Management Review*, 27(2), 1-24.
- Akdere, M., & Roberts, P. B. (2008). Economics of social capital: Implications for organizational performance. *Advances in Developing Human Resources*, 10(6), 802-816.
- Asiaei, K., & Jusoh, R. (2015). A multidimensional view of intellectual capital: the impact on organizational performance. *Management Decision*, 53(3), 668-697. doi:10.1108/MD-05-2014-0300
- Bapuji, H., & Crossan, M. (2005). *Co-evolution of social capital and knowledge: An extension of the Nahapiet and Ghoshal (1998) framework* Paper presented at the Academy of Management Annual Meeting Proceedings.
- Baughn, C. C., Neupert, K. E., Anh, P., & Hang, N. (2011). Social capital and human resource management in international joint ventures in Vietnam: A perspective from a transitional economy. *International Journal of Human Resource Management*, 22(5), 1017-1035. doi:10.1080/09585192.2011.556776
- Bilhuber Galli, E., & Müller-Stewens, G. (2012). How to build social capital with leadership development: Lessons from an explorative case study of a multibusiness firm. *Leadership Quarterly*, 23(1), 176-201. doi:10.1016/j.leaqua.2011.11.014
- Bourdieu, P. (1986). The forms of capital. In I. Szeman & T. Kaposy (Eds.), *Cultural theory: An anthology* (pp. 81-96). Malden, MA: Wiley-Blackwell.
- [blinded for review],
- Cabello-Medina, C., López-Cabrales, Á., & Valle-Cabrera, R. (2011). Leveraging the innovative performance of human capital through HRM and social capital in Spanish firms. *International Journal of Human Resource Management*, 22(4), 807-828. doi:10.1080/09585192.2011.555125
- Cadmus, E., & Johansen, M. L. (2012). The time is now: Developing a nurse manager residency program. *Nursing Management*, 43(10), 18-24. doi:10.1097/01.NUMA.0000419448.52255.6c
- Call, M. L., Nyberg, A. J., & Thatcher, S. M. B. (2015). Stargazing: An integrative conceptual review, theoretical reconciliation, and extension for star employee research. *Journal of Applied Psychology*, 100(3), 623-640. doi:10.1037/a0039100
- Cathcart, E. B., & Greenspan, M. (2012). A new window into nurse manager development. *Journal of Nursing Administration*, 42(12), 557-561. doi:10.1097/NNA.0b013e318274b52d
- Chase, L. K. (2012). Are you confidently competent? *Nursing Management*, 43(5), 50.
- Choi, Y. (2016). The impact of social capital on employees' knowledge-sharing behavior: An empirical analysis of U.S. federal agencies. *Public Performance & Management Review*, 39(2), 381-405. doi:10.1080/15309576.2015.1108795
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95-120.
- Daud, S., & Yusoff, W. (2010). Knowledge management and firm performance in SMEs: The role of social capital as a mediating variable *Asian Academy of Management Journal*, 15(2), 135-155.
- Debrulle, J., Maes, J., & Sels, L. (2014). Start-up absorptive capacity: Does the owner's human and social capital matter? *International Small Business Journal*, 32(7), 777-801. doi:10.1177/0266242612475103
- Dess, G. G., & Shaw, J. D. (2001). Voluntary turnover, social capital, and organizational performance *Academy of Management Review*, 26(3), 446-456. doi:10.5465/AMR.2001.4845830

- Djuric, M., & Filipovic, J. (2015). Human and social capital management based on complexity paradigm: Implications for various stakeholders and sustainable development. *Sustainable Development*, 23(6), 343-354. doi:10.1002/sd.1595
- Ellinger, A. D., Ellinger, A. E., Bachrach, D. G., Yu-Lin, W., & Elmadağ Baş, A. (2011). Organizational investments in social capital, managerial coaching, and employee work-related performance. *Management Learning*, 42(1), 67-85. doi:10.1177/1350507610384329
- Fawcett, J. (1999). *The relationship of theory and research* (3rd ed.). Philadelphia, PA: F. A. Davis Company.
- Felício, J. A., Couto, E., & Caiado, J. (2012). Human capital and social capital in entrepreneurs and managers of small and medium enterprises. *Journal of Business Economics & Management*, 13(3), 395-420. doi:10.3846/16111699.2011.620139
- Felício, J. A., Couto, E., & Caiado, J. (2014). Human capital, social capital and organizational performance. *Management Decision*, 52(3), 350-364. doi:10.1108/MD-04-2013-0260
- Ferreira-Lopes, A., Roseta-Palma, C., & Sequeira, T. N. (2012). When sociable workers pay off: Can firms internalize social capital externalities? *Structural Change & Economic Dynamics*, 23(2), 127-136. doi:10.1016/j.strueco.2012.01.004
- Greve, A., Benassi, M., & Sti, A. D. (2010). Exploring the contributions of human and social capital to productivity. *International Review of Sociology*, 20(1), 35-58. doi:10.1080/03906701003643261
- Grootaert, C., Narayan, D., Jones, V., & Woolcock, M. (2004). *Measuring social capital: An integrated questionnaire*. Washington, DC: World Bank Publications.
- Grootaert, C., & Van Bastelaer, T. (2002). *Understanding and measuring social capital: A multidisciplinary tool for practitioners*. Retrieved from <http://www.worldbank.org/en/topic/socialdevelopment>
- Hofmeyer, A. (2013). How can a social capital framework guide managers to develop positive nurse relationships and patient outcomes? *Journal of Nursing Management*, 21(5), 782-789. doi:10.1111/jonm.12128
- Hsu, C., Chang, C., Huang, H., & Chiang, C. (2011). The relationships among social capital, organisational commitment and customer-oriented prosocial behaviour of hospital nurses. *Journal of Clinical Nursing*, 20(9/10), 1383-1392. doi:10.1111/j.1365-2702.2010.03672.x
- Hsu, I., & Sabherwal, R. (2011). From intellectual capital to firm performance: The mediating role of knowledge management capabilities. *IEEE Transactions on Engineering Management*, 58(4), 626-642. doi:10.1109/TEM.2011.2111455
- Kang, S., & Snell, S. A. (2009). Intellectual capital architectures and ambidextrous learning: A framework for human resource management. *Journal of Management Studies*, 46(1), 65-92. doi:10.1111/j.1467-6486.2008.00776.x
- Kellerman, B. (2012). *The end of leadership*. New York, NY: Harper Collins.
- Kor, Y. Y., & Mesko, A. (2013). Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. *Strategic Management Journal*, 34(2), 233-244. doi:10.1002/smj.2000
- Kostopoulos, K. C., Bozionelos, N., & Syrigos, E. (2015). Ambidexterity and unit performance: Intellectual capital antecedents and cross-level moderating effects of human resource practices. *Human Resource Management*, 54, s111-s132. doi:10.1002/hrm.21705
- Leitch, C. M., McMullan, C., & Harrison, R. T. (2013). The development of entrepreneurial leadership: The role of human, social and institutional capital. *British Journal of Management*, 24(3), 347-366. doi:10.1111/j.1467-8551.2011.00808.x
- Lindberg, C., Nash, S., & Lindberg, C. (2008). *On the edge: Nursing in the age of complexity*. Bordentown, NJ: PlexusPress.

- Luthans, F., & Youssef, C. M. (2004). Human, social and now positive psychological capital management: investing in people for competitive advantage. *Organizational Dynamics*, 33(2), 143-160. doi:10.1016/j.orgdyn.2004.01.003
- Makela, K., Bjorkman, I., & Ehrnrooth, M. (2009). MNC subsidiary staffing architecture: building human and social capital within the organisation. *International Journal of Human Resource Management*, 20(6), 1273-1290. doi:10.1080/09585190902909814
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266. doi:10.5465/AMR.1998.533225
- Ng, T. W. H., & Feldman, D. C. (2010). The effects of organizational embeddedness on development of social capital and human capital. *The Journal Of Applied Psychology*, 95(4), 696-712. doi:10.1037/a0019150
- Oldroyd, J. B., & Morris, S. S. (2012). Catching falling stars: A human resource response to social capital's detrimental effect of information overload on star employees. *Academy of Management Review*, 37(3), 396-418.
- Pastoriza, D., & Ariño, M. (2013). Does the ethical leadership of supervisors generate internal social capital? *Journal of Business Ethics*, 118(1), 1-12. doi:10.1007/s10551-012-1536-7
- Porter-O'Grady, T. (2003). Nurses as knowledge workers. *Creative Nursing*, 9(2), 6-9.
- Putnam, R. D. (1993). The prosperous community: Social capital and public life. *American Prospect*, 13, 35-42.
- Reed, K. K., Lubatkin, M., & Srinivasan, N. (2006). Proposing and testing an intellectual capital-based view of the firm. *Journal of Management Studies*, 43(4), 867-893. doi:10.1111/j.1467-6486.2006.00614.x
- Shaw, J. D., Duffy, M. K., Johnson, J. L., & Lockhart, D. E. (2005). Turnover, social capital losses, and performance. *Academy of Management Journal*, 48(4), 594-606. doi:10.5465/AMJ.2005.17843940
- Smith, M. C., & Stullenbarger, E. (1991). A prototype for integrative review and meta-analysis of nursing research. *Journal of Advanced Nursing*, 16(11), 1272-1283. doi:10.1111/j.1365-2648.1991.tb01554.x
- Somaya, D., Williamson, I. O., & Lorinkova, N. (2008). Gone but not lost: The different performance impacts of employee mobility between cooperators versus competitors. *Academy of Management Journal*, 51(5), 936-953. doi:10.5465/AMJ.2008.34789660
- Stark, E. E., & Jeffries, F. L. (2011). Part II: Leadership, social capital, and personality: Social capital via leader-member exchanges: An avenue to human capital? *Current Topics in Management*, 15, 117-136.
- Styhre, A. (2008). The role of social capital in knowledge sharing: the case of a specialist rock construction company. *Construction Management & Economics*, 26(9), 941-951. doi:10.1080/01446190802259035
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Review*, 48(3), 450-463.
- The American Organization of Nurse Executives. (2011). The AONE nurse executive competencies. Retrieved from The American Organization of Nurse Executives website: [http://www.aone.org/resources/leadership%20tools/PDFs/AONE\\_NEC.pdf](http://www.aone.org/resources/leadership%20tools/PDFs/AONE_NEC.pdf)
- Titzer, J. L., Shirey, M. R., & Hauck, S. (2014). A nurse manager succession planning model with associated empirical outcomes. *Journal of Nursing Administration*, 44(1), 37-46. doi:10.1097/NNA.0000000000000019
- Tseng, J., Wang, H., & Yen, Y. (2014). Organisational innovability: exploring the impact of human and social capital in the banking industry. 25, 1088-1104. doi:10.1080/14783363.2013.781294

- Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The leadership quarterly*, 18(4), 298-318.
- Wendler, M. C., Olson-Sitki, K., & Prater, M. (2009). Succession planning for RNs: Implementing a nurse management internship. *Journal of Nursing Administration*, 39(7-8), 326-333. doi:10.1097/NNA.0b013e3181ae9692
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546-553.
- Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. *Journal of Management Studies*, 41(2), 335-361. doi:10.1111/j.1467-6486.2004.00435.x
- Zimmerman, B., Lindberg, C., & Plsek, P. (2001). *Edgework: Insights from complexity science for health care leaders*. Irving, TX: VHA Inc.

### Highlights

#### Organizational Intellectual Capital and the Role of the Nurse Manager. A Proposed Conceptual Model.

- A conceptual model for organizational intellectual capital is proposed.
- Organizational capital provides context for organizational behavior.
- Managers have direct and moderating effects on the teams they lead.
- Human capital and social capital are related in provision of knowledge exchange.
- Quality and combination of human capital and social capital may improve outcomes.